

**Fact Sheet  
July 2002**

# **OAKLAND ARMY BASE Draft Remedial Action Plan Draft Risk Management Plan**



## **Availability of draft Remedial Action Plan and draft Risk Management Plan**

*DTSC is one of six  
Boards and  
Departments within  
the California  
Environmental  
Protection Agency.  
The Department's  
mission is to restore,  
protect and enhance  
the environment,  
to ensure public health,  
environmental  
quality and  
economic vitality,  
by regulating  
hazardous waste,  
conducting and  
overseeing  
cleanups, and  
developing  
and promoting  
pollution prevention.*

State of California



California  
Environmental  
Protection Agency



### **Introduction**

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to inform the public of the availability of, and invite public review and comment on, the draft Remedial Action Plan (RAP) and draft Risk Management Plan (RMP) for portions of the Oakland Army Base (OARB), Oakland, California. The draft RAP and draft RMP cover the OARB property to be transferred to the City of Oakland through the Oakland Base Reuse Authority by Economic Development Conveyance. See Figure 1.

The RAP identifies preferred alternatives at seven sites which have been fully investigated and characterized for release of hazardous substances and for which remediation would proceed upon final approval of the RAP. The RMP, which is an appendix to the RAP, addresses all other areas of known or potential contamination, which may not yet have been fully investigated or characterized. The RMP specifies health protective measures that must be followed during and after redevelopment at these locations. The RMP includes protocols for conducting inspections, performing routine sampling, maintaining institutional and engineering controls, elevating RMP locations to RAP sites as appropriate, and fulfilling reporting obligations.

This fact sheet provides information on the public comment period and meeting, site background, summary of investigations, RAP and RMP development, remediation goals, environmental conditions at RAP sites and RMP locations, and the proposed remedies.

### **Public Meeting & Comment Period**

DTSC invites the public to comment on the draft RAP and draft RMP for the Oakland Army Base. The public comment period begins on **July 22, 2002** and ends on **August 21, 2002**. DTSC will hold a public meeting to provide information and answer questions about the proposed remedies:

Tuesday, August 6, 2002, 6:30 p.m.  
West Oakland Multipurpose  
Senior Center  
1724 Adeline Street, 2<sup>nd</sup> Floor  
Oakland, California

If you wish to submit written comments on the draft RAP and draft RMP, please send or email them no later than August 21, 2002 to:

Henry Wong  
Remedial Project Manager  
Department of Toxic Substances  
Control  
700 Heinz Ave., Suite 200  
Berkeley, CA 94112  
Phone: (510) 540-3770  
Fax: (510) 849-5285  
Email: [hwong@dtsc.ca.gov](mailto:hwong@dtsc.ca.gov)

DTSC will respond to and consider all comments received before approving the RAP and RMP.

## Site Background

The OARB comprises of approximately 425 acres. Much of the base property was originally tidal flats or shallow open water. During the first half of 1900s, the area was filled to create the land subsequently acquired by the Army in 1941.

The OARB served as a major Army cargo port and warehousing facility from 1941 until it was closed under the Base Realignment and Closure program on September 30, 1999. Army activities supported the OARB's primary military mission as a distribution center and included maintaining and fueling railroad locomotive engines and trucks that transported cargo, draining fluids from vehicles for overseas shipment, and repairing and servicing vehicles, equipment, and base facilities.

The *Amended Draft Final Reuse Plan for the Oakland Army Base*, dated July 23, 2001 (Amended Reuse Plan), includes about 189 acres of the OARB which will be redeveloped by the City of Oakland with a variety of commercial and industrial uses as part of the Gateway Development Area. Also, close to 185 acres (plus roughly 56 acres of submerged lands) will be developed by the Port of Oakland for maritime, rail, and other port activities as part of the Port Development Area. No residential uses will be allowed on the OARB property under the Amended Reuse Plan. The Amended Reuse Plan, draft RAP, and draft RMP are analyzed in the OARB Area Redevelopment Environmental Impact Report pursuant to the California Environmental Quality Act.

## Summary of Investigations

The Army has been conducting site environmental investigations and selected remedial actions since 1989. DTSC is the primary agency overseeing the investigation and cleanup of the OARB, and the Regional Water Quality Control Board, San Francisco Bay Region regulates the removal and closure of petroleum fuel tanks.

The Army's remedial activities have included removal of aboveground petroleum storage tanks (ASTs) and underground petroleum storage tanks (USTs), excavation of contaminated soil and removed petroleum hydrocarbons from monitoring wells at former tank locations, excavation of pesticide-containing soil from the off-site wetlands area, and replacement of many transformers and electrical equipment containing polychlorinated biphenyls (PCBs).

## Draft RAP and RMP Development

Evaluation of all site investigation data discussed above resulted in the identification of contaminants of concern (COCs) at seven RAP sites and other RMP locations. Remediation goals were developed with consideration of planned land uses. Once COCs were identified, site-specific remediation goals were calculated for COCs in soil and groundwater. The RAP evaluates remedial alternatives and proposes remedies for the sites.

## Remediation Goals

The RAP establishes the soil and groundwater remediation goals as follows:

**Soil:** Prevent direct contact with known or potentially impacted soil before implementation of remedial actions or redevelopment.

Specifically for the oil reclaiming plant (ORP)/Building 1 area, remove, or remove and treat, tar-like residue to eliminate hazards associated with this source material and to allow planned land uses consistent with the Amended Reuse Plan.

Remove or treat impacted soil that interferes with planned land uses, or is encountered during redevelopment or through post-redevelopment activities, or as otherwise necessary to achieve site-specific soil remediation goals designated in the RAP.

Contain impacted soil that will interfere with planned land uses by maintaining existing cover or constructing new cover.

**Groundwater:** Implement institutional controls, alone or in combination with site-specific engineering controls as part of all selected remedies, to prevent incidental ingestion or dermal contact with impacted groundwater under existing and planned land uses consistent with the Amended Reuse Plan.

Treat volatile organic compound (VOC)-impacted groundwater that interferes with planned land uses or as otherwise needed to achieve site-specific, groundwater remediation goals, or apply engineering controls to new structures to allow planned redevelopment or as otherwise necessary to reduce potential exposure posed by vapor intrusion to the remediation goal target risk levels.

Prevent further significant increases of metals and other non-volatile COC concentrations in groundwater.

## Environmental Condition and Remedy Selection for RAP Sites

Former ORP/Building 1 Area The former ORP consisted of a building and several ASTs in the vicinity. Waste disposal practices likely resulted in the release of tarry residue to ground adjacent to these operations, which was covered by fill to construct Building 1 in 1941. The tarry residue contains lead, polycyclic aromatic hydrocarbons (PAHs), PCBs, dioxins, and furans, and is very acidic in some locations.

The proposed remedial action for the tarry residue is excavation and neutralization. The neutralized wastes would be disposed at an off-site permitted facility. The remedy includes five years of post remediation groundwater monitoring.

VOCs in Groundwater at Eastern End of Building 807 The VOCs in the shallow water-bearing zone of the Building 807 area do not appear to be migrating; however, the residual VOC concentrations in groundwater may pose a vapor intrusion threat to building occupants if a building is constructed over the area in the future. The RAP proposes in-situ chemical oxidation/reduction as the remedy with five years of groundwater monitoring.

VOCs in Groundwater near Buildings 808 and 823 Vinyl chloride and other VOCs are present in shallow groundwater in an area north of Building 808 and south of Building 823. The VOCs are not migrating, but the VOC-impacted groundwater poses a potential vapor intrusion threat. The RAP proposes in-situ bioremediation of vinyl chloride in groundwater with five years of groundwater monitoring.

VOCs in Groundwater near Building 99 An area of the shallow water-bearing zone near Building 99 is impacted with VOCs. No source or significant soil contamination has been identified; however, VOC-impacted groundwater poses a vapor intrusion threat. Because the VOCs are amenable to aerobic degradation by microorganisms, the proposed remedies include in-situ bioremediation to remove or significantly reduce remaining VOC concentrations and to monitor the groundwater for five years.

Benzene and MTBE in Groundwater Near Former USTs 11A/12A/13A Following removal of former fuel USTs in the area near Building 828, significant concentrations of petroleum hydrocarbons, and benzene, toluene, ethylbenzene, and xylenes were found to remain in soil and shallow groundwater near the location of the former tanks. Additionally, methyl tertiary butyl ether (MTBE), which is a fuel oxygenate, was also detected in the shallow water-bearing zone. The proposed remedies include excavation of contaminated soil and in-situ

bioremediation for benzene and MTBE in the shallow water-bearing zone, and five years of groundwater monitoring.

Building 991 Area Building 991 was used as a locomotive engine maintenance shop. Petroleum hydrocarbons, pesticides, and other COCs have impacted soil and groundwater in the vicinity. The proposed remedy is to excavate contaminated soil that may continue to leach COCs to groundwater and dispose of the soil as hazardous waste at an off-site permitted facility. Residual petroleum hydrocarbons in groundwater are proposed to be addressed by in-situ bioremediation with five years of groundwater monitoring.

Building 99 Building 99 was used for ship manufacturing, metalworking, and vehicle and electrical maintenance shop. Analytical results of available soil samples do not suggest significant releases of VOCs, PAHs, TPH or metals have occurred from the building. However, given the historical uses at Building 99 and the limited nature of the investigations, additional sampling at Building 99 is warranted. The proposed remediation, if required, consists of excavating soil with COCs greater than the remediation goals.

## Environmental Condition and Remedy Selection for RMP Locations

Washracks, Sumps, Oil/Water Separators, Miscellaneous Operations, and Tanks The RAP identifies about 128 locations with washracks, sumps, oil/water separators, miscellaneous operations, USTs, and ASTs. These locations include: (1) areas requiring the removal of an existing tank or subsurface structure, (2) locations requiring additional characterization, (3) former tank sites anticipated to possibly require excavation of residual, impacted soil or groundwater monitoring, (4) locations where residual, impacted soil is anticipated and will be removed when encountered during infrastructure installation or redevelopment, and (5) locations with no currently identified environmental issues but which will be inspected and sampled for undiscovered contamination in accordance with the soil management protocols in the RMP.

For sites requiring removal of an existing structure or sites where impacted soil is anticipated, the proposed remedy assumes that an average of about 50 cubic yards of debris and contaminated soil will be removed at each site and disposed as hazardous waste at an off-site permitted facility. Some of the tank sites will require groundwater monitoring to meet regulatory closure requirements. For sites requiring additional characterization, the site will be inspected and sampled during redevelopment as outlined in the RMP. Finally, for RMP locations where no contamination has been

found to date, the area will be inspected and sampled in accordance with the RMP during redevelopment to confirm no contamination exists above the remediation goals at these locations.

#### Former Industrial and Chemical Handling Locations

The former industrial and chemical handling locations include:

*Debris Area Near Building 99*

*Building 85*

*Building 812*

*Building 823*

*Potential Drum Drainage Area East of Buildings 805 and 806*

*Former Motor Pool and Salvage Operations at Building 640*

*Benzidine at Former Used Oil Tank 21*

Although no significant contamination was known to exist at these locations, historical operations suggest the likelihood for past chemical releases. The proposed remedies for these locations include excavation of impacted soils, disposal of such soils at an off-site permitted facility, and if necessary, in-situ chemical oxidation/reduction or in-situ bioremediation of the shallow water-bearing with five years of groundwater monitoring. The RMP provides mechanisms to address encountered field conditions for OARB property with DTSC oversight as redevelopment proceeds.

Historical Spills and Stains Numerous spills and stains have been observed over the years at the OARB, as found on historical photographs or Army records. Given the use history of the OARB, most of these releases in stained areas likely involved petroleum hydrocarbons associated with diesel fuel or motor oil. As a consequence, soil excavated during new construction will be inspected for staining or other signs of contamination. The RMP specifies protocols for inspecting, sampling and managing contaminated soil encountered during and after redevelopment.

Lead in Soil around Buildings The Army has identified the buildings that may contain lead-based paint based upon surveys and the age of construction. Redevelopment includes demolition of many of these buildings. The RAP proposes excavation of lead contaminated soil greater than the remediation goal and disposal at an off-site permitted facility.

Former PCB-Containing Transformers and Equipment Locations Existing inventories list approximately 110 pieces of electrical transformers or other equipment that may have contained, or still, contain PCBs.

Under the proposed remedy, electrical equipment at the OARB that still contains PCBs will be removed from

service and managed in accordance with applicable regulations prior to building demolition. Outdoor areas where transformers were located will also be inspected and sampled for the presence of PCBs.

Storm Drains and Sanitary Sewers The drainage systems at the OARB consists of about 110,000 linear feet of storm drain and close to 25,000 linear feet of sanitary sewer. Army studies indicate that both systems are in poor condition and found contamination in and around the pipes. The proposed remedy includes investigation of sediment inside these systems drains in advance of infrastructure replacement. Interim remedial actions including flushing and proper disposal will be performed if COC-containing sediment is discovered.

Railroad Tracks About 26 miles of railroad track remain at the OARB with potential contamination typical of railroad operation. In addition, former railroad track ballast is covered with imported gravel in the former Baldwin Railyard. The railroad tracks will be removed or replaced during redevelopment. Protocols for inspecting and testing potentially contaminated railroad track sub-ballast have been established in the RMP. Under the proposed remedial action, sub-ballast found during redevelopment to contain COCs greater than remediation goals will be excavated and disposed at an off-site permitted facility.

Marine Sediments The Army has identified COC impacts to marine sediments near storm drain outfalls from the portions of the OARB being transferred to the City of Oakland. These outfalls discharge to the Oakland Outer Harbor in San Francisco Bay. Contaminants of concern have been detected at Outfalls 8 through 11 and the Army finds that marine sediments at these outfalls, if not capped in the future, may result in limited impacts to aquatic communities. The Port of Oakland intends to fill 26 acres to provide additional terminal capacity and create two berths in the Oakland Outer Harbor (New Berth 21). The Port of Oakland's project will result in covering the marine sediments adjacent to Outfalls 8 through 11, thereby addressing potential impacts.

## **Project Schedule**

The implementation schedule for the selected remedial actions at the RAP sites and RMP locations at the OARB will conform to the phased approach of redevelopment proposed by the City of Oakland. Within this phased approach, the City plans to complete all remedial actions at RAP sites within five years after the conveyance, during which time the City of Oakland will continue to provide public participation activities. The City of Oakland will implement the proposed remedies for the RMP locations within ten years after the conveyance and in phases consistent with redevelopment projects.

## For More Information

If you would like more information about the RAP and RMP, please call Henry Wong, DTSC Remedial Project Manager, at (510) 540-3770, [hwong@dtsc.ca.gov](mailto:hwong@dtsc.ca.gov) or Andrew Clark-Clough, City of Oakland Environmental Program Supervisor, at (510) 238-6361, [aclarkclough@oaklandnet.com](mailto:aclarkclough@oaklandnet.com). Media inquiries should be directed to Angela Blanchette, DTSC Public Information Officer, at (510) 540-3732, [ablanchette@dtsc.ca.gov](mailto:ablanchette@dtsc.ca.gov).

## Information Repositories

The draft RAP and draft RMP are available for review and copying at the following locations:

Oakland Main Library  
125 14<sup>th</sup> Street  
Oakland, CA 94612

West Oakland Public Library  
1801 Adeline Street  
Oakland, CA 94607

Oakland Base Reuse Authority  
700 Murmansk Street, Suite 3  
Oakland, CA 94607

City of Oakland  
Planning and Zoning Division  
250 Frank H. Ogawa Plaza, Suite 3330  
Oakland, CA 94612

Department of Toxic Substances Control  
700 Heinz Ave., Suite 200  
Berkeley, CA 94112  
Attn: Lule Varela (510) 540-3800

## Glossary

**Benzene** - A petroleum derivative widely used in the chemical industry. It is used in synthesis of rubber, nylon, polystyrene, and pesticides; and production of gasoline. Benzene is a highly volatile chemical readily absorbed by breathing, ingestion or contact with the skin. Short-term exposures to high concentrations of benzene may result in death following depression of the central nervous system or fatal disturbances of heart rhythm. Long-term, low-level exposures to benzene can result in blood disorders such as aplastic anemia and leukemia. Benzene is listed as a cancer-causing chemical under Proposition 65.

**Bioremediation** - A process that uses microorganisms to change toxic compounds into non-toxic ones.

**COC** - Contaminants of Concern

**Dioxins** - A group of generally toxic organic compounds that may be formed as a result of incomplete combustion. They are rapidly absorbed through the skin and gastrointestinal tract and are listed as cancer-causing chemicals under Proposition 65.

**MTBE** - methyl tertiary butyl ether, a fuel oxygenate.

**Petroleum** - Crude oil or any fraction thereof that is liquid under normal conditions of temperature and pressure. The term includes petroleum-based substances comprising a complex blend of hydrocarbons derived from crude oil through the process of separation, conversion, upgrading, and finishing, such as motor fuel, jet oil, lubricants, petroleum solvents, and used oil.

**PAHs - Polycyclic Aromatic hydrocarbons** - PAHs are natural constituents of crude oil, and also may be formed when organic materials such as coal, oil, fuel, wood or even foods are not completely burned. PAHs are also found in lampblack, a by-product of the historic gas manufacturing process. PAHs are found in a wide variety of other materials, including diesel exhaust, roofing tars, asphalt, fireplace smoke and soot, cigarettes, petroleum products, some foods, and even some shampoos. PAHs tend to stick to soil and do not easily dissolve in water, and generally do not move in the environment. PAHs are suspected of causing cancer in humans.

**PCBs - Polychlorinated biphenyls** - A group of toxic chemicals used for a variety of purposes including electrical applications, carbonless copy paper, adhesives, hydraulic fluids, and caulking compounds. PCBs do not breakdown easily and are listed as cancer-causing agents under Proposition 65.

**Vinyl chloride** - Vinyl chloride is widely used in the plastics industry in creating polyvinyl chloride. It is listed as a cancer-causing agent under Proposition 65.

**VOC - Volatile organic compounds** - Organic liquids, including many common solvents, that readily evaporate at temperatures normally found at ground surface and at shallow depths. They take part in atmospheric photochemical (sun-driven) reactions to produce smog.

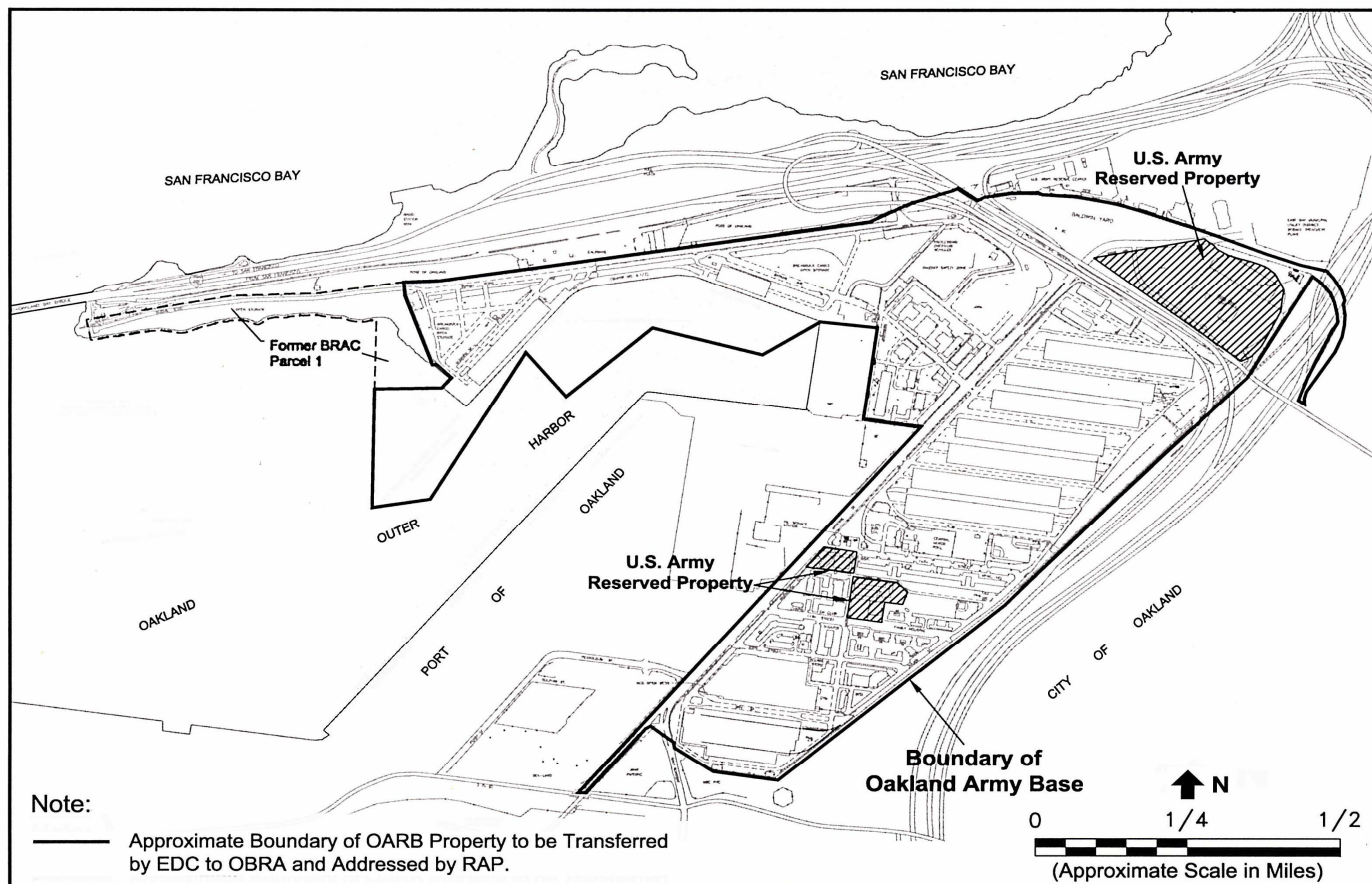


Figure 1 - OAKLAND ARMY BASE

## Anuncio

Si prefiere hablar con alguien en español acerca de ésta información, favor de llamar a Jacinto Soto, Departamento de Control de Sustancias Tóxicas. El número de teléfono es (510) 540-3842.

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Department of Toxic Substances Control  
 700 Heinz Avenue, Suite 200  
 Berkeley, CA 94710-2721  
 Attn: Henry Wong